AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): An electromagnetic device mounted to an automotive transmission and used in an oil containing sulfur, said electromagnetic device comprising:

an outer casing:

a moveable shaft supported by said casing;

a bobbin disposed inside said outer casing so as to be disposed around said moveable shaft on a common axis with said moveable shaft;

a coil embedded in an outer molding, said coil being constructed by winding a conducting wire onto said bobbin,

an electrically-insulating layer coated on said conducting wire; and

means for preventing sulfur compounds present in the oil from permeating said electrically-insulating layer and attendantly reducing the formation of sulfur compounds on a surface of said conducting wire, thereby suppressing the reduction in adhesive of the electrically-insulating layer to said conducting wire, wire breakage, and short circuiting between said conducting wires,

said preventing means comprising said electrically-insulating layer being of a material resistant to permeation by the sulfur compounds.

2. (previously presented): The electromotive device according to Claim 1, wherein said bobbin and said outer molding are composed of a thermosetting resin.

3. (currently amended): An electromotive device mounted to an automotive transmission and used in an oil containing sulfur, said electromagnetic device comprising:

an outer casing;

a moveable shaft supported by said outer casing;

a bobbin disposed inside said outer casing so as to be disposed around said moveable shaft on a common axis with said moveable shaft;

a coil embedded in an outer molding, said coil being constructed by winding a conducting wire onto said bobbin, and

an electrically-insulating layer coated on said conducting wire;

wherein said electrically-insulating layer comprises a modified polyimide resin which is resistant to permeation by sulfur compounds present in the oil and organosulfur compounds present in the oil, said electrically-insulating layer preventing the sulfur compounds and the organosulfur compounds from permeating said electrically-insulating layer and attendantly reducing the formation of sulfur compounds on a surface of said conducting wire, thereby suppressing the reduction in adhesive of the electrically-insulating layer to said conducting wire, wire breakage, and short circuiting between said conducting wires.

4. (previously presented): The electromotive device according to Claim 3, wherein said bobbin and said outer molding are composed of a thermosetting resin.

5. (currently amended): An electromotive device mounted to an automotive transmission and used in an oil containing sulfur, said electromagnetic device comprising:

an outer casing;

a moveable shaft supported by said outer casing;

a bobbin disposed inside said outer casing so as to be disposed around said moveable shaft on a common axis with said moveable shaft;

a coil embedded in an outer molding, said coil being constructed by winding a conducting wire onto said bobbin, and

an electrically-insulating layer coated on said conducting wire;

wherein said electrically-insulating layer comprises a thermosetting epoxy resin which is resistant to permeation by sulfur compounds present in the oil and organosulfur compounds present in the oil, said electrically-insulating layer preventing the sulfur compounds and the organosulfur compounds from permeating said electrically-insulating layer and attendantly reducing the formation of sulfur compounds on a surface of said conducting wire, thereby suppressing the reduction in adhesive of the electrically-insulating layer to said conducting wire, wire breakage, and short circuiting between said conducting wires.

6. (previously presented): The electromotive device according to Claim 5, wherein said bobbin and said outer molding are composed of a thermosetting resin.

7. (currently amended): An electromotive device mounted to an automotive transmission and used in an oil containing sulfur, said electromagnetic device comprising:

an outer casing;

a moveable shaft supported by said outer casing;

a bobbin disposed inside said outer casing so as to be disposed around said moveable shaft on a common axis with said moveable shaft;

a coil embedded in an outer molding, said coil being constructed by winding a conducting wire onto said bobbin, and

an electrically-insulating layer coated on said conducting wire;

wherein said electrically-insulating layer comprises a phenol resin which is resistant to permeation by sulfur compounds present in the oil and organosulfur compounds present in the oil, said electrically-insulating layer preventing the sulfur compounds and the organosulfur compounds from permeating said electrically-insulating layer and attendantly reducing the formation of sulfur compounds on a surface of said conducting wire, thereby suppressing the reduction in adhesive of the electrically-insulating layer to said conducting wire, wire breakage, and short circuiting between said conducting wires.

8. (previously presented): The electromotive device according to Claim 7, wherein said bobbin and said outer molding are composed of a thermosetting resin.